REMARKS

Claims 1-23 are currently pending. Claims 20-23 have been allowed. The Applicant is herein amending claims 1 and 9.

The Examiner's allowance of claims 20-23 is noted with appreciation, as is the Examiner's acknowledgement of the Applicant's Information Disclosure Statement mailed on March 8, 2004.

Claims 1-19 were rejected under 35 U.S.C. § 102(b) as being anticipated over Okamura (U.S. Patent No. 5,381,117).

Each of claims 1-19 now defines a resonator having a "spiral shaped" loop, where adjacent conductor runs of the loop are a predetermined distance from one another to isolate electrical fields between runs. The predetermined distance is "equal to or greater than the thickness of the substrate." Configuring the resonator structure in this manner has a number of benefits, one being that it substantially reduces radiated electromagnetic energy, thereby reducing loss and increasing the Q of the resonator.

Okamura does not disclose these limitations. Indeed, Okamura expressly teaches away from a spiral-shaped loop, stating: "[With a spiral shape], magnetic fluxes are influenced by one another between the adjoining patterns, thus an electric current flow is difficult to obtain. Therefore, a substantial resistance increases and the Q value becomes lower." (col. 1, lines 61-66). Further note that each of Okamura's claims each recite the limitation of a "non-spiral loop shape" (e.g., see claims 1, 6, 18, and 19). Thus, Okamura fails to disclose, and actually teaches away from, a spiral shaped loop with appropriate spacing between conductor runs as recited in the Applicant's claims 1-19.

In order for Okamura to anticipate the Applicant's claimed invention, it must disclose each and every limitation recited in the Applicant's claims 1-19. As Okamura does not satisfy

this standard, the Applicant respectfully requests reconsideration and withdrawal of this rejection.

Okamura suffers other deficiencies as well. For instance, Okamura fails to disclose a phase locked loop (PLL) module that includes a fractional wavelength looped-stub resonator "operatively coupled to the voltage controlled oscillator circuit ..., the resonator for providing a frequency selective element for the voltage controlled oscillator circuit" (as defined in the Applicant's claim 9), let alone a PLL where the looped-stub resonator "has a resonant frequency higher than an output frequency of the module" (as defined in the Applicant's dependent claim 18), or even more particularly, a PLL module where "one or more frequency dividers are used to reduce the resonant frequency to the output frequency" (as defined in the Applicant's claim dependent 19). Nor does Okamura disclose a module where the voltage controlled oscillator circuit and the a spiral shaped looped-stub resonator are "located on a common substrate" as recited in Applicant's dependent claim 11.

In addition, Okamura fails to disclose a "spiral shaped looped-stub resonator" that has a structure having a number of layers, where "the transmission line is located in an inner layer of the structure" (as defined in Applicant's dependent claim 3), let alone a configuration where the inner layer is "substantially surrounded by dielectric insulating material layers" (as defined in Applicant's dependent claim 4). Note that such dielectric insulating material layers further improve the Q of the resonator. Also, Okamura fails to disclose a spiral shaped looped-stub resonator that "is incorporated into a voltage controlled oscillator of a phase locked loop circuit" (as recited in Applicant's dependent claim 6).

The section cited by the Examiner as disclosing various limitations claimed by the Applicant (such as the "voltage controlled oscillator circuit" of claims 9-19, and the "voltage controlled oscillator of a phase locked loop circuit" of claim 6, and the "one or more frequency dividers" of claim 19), merely states: "... a resonator for operation at several hundred MHz to several GHz used in a portable radio and the like...". Simply stated, this general statement does not inherently implicate the Applicant's claimed invention. Rather, a resonator can be used a

number of ways in a portable radio, and without a PLL or a VCO or features defined in the Applicant's claims.

For example, a typical radio design uses a resonator as the tuner for the radio. The resonator is connected between the antenna and ground. The resonator only resonates at a particular frequency, which depends on the value of the capacitor and/or inductor in the resonator. As radio signals are received by the antenna, only those signals having a frequency that matches this resonant frequency will be passed to the radio's amplifier. All other frequencies are ignored. When the tuner knob of the radio is adjusted, either the capacitor or the inductor of the resonator is being adjusted. Varying the capacitor, for instance, changes the resonant frequency of the resonator, and therefore changes the frequency of the radio signals that the resonator will pass to amplifier.

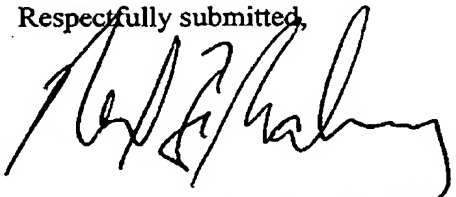
This is one way a resonator might be used in a "portable radio". Thus, without more information, it is unclear how Okamura would use his resonator in such an application. To suggest otherwise seems to implicate hindsight reasoning based in knowledge of the Applicant's claims, which would be improper. It is also notable that Okamura's 36 page disclosure is completely devoid of the following terms: filter, phase, voltage, lock, control, oscillator, VCO, and PLL.

For purposes of argument, even if it is assumed that Okumura intended his resonator to be used in conjunction with the VCO of a PLL (with the assumption being based solely on the reference to a "portable radio and the like"), the Applicant can find no basis for further assuming that Okumura also intended that his resonator have a resonant frequency higher than an output frequency of the PLL module, let alone one or more frequency dividers to reduce the resonant frequency to the output frequency (as recited in the Applicant's dependent claims 18 and 19, respectively).

For at least these reasons, the Applicant believes that claims 1-19 are patentably distinct from Okamura, and respectfully requests the Examiner to reconsider and withdraw this rejection of claims 1-19.

The Applicant believes the above amendments and remarks to be fully responsive, thereby placing this application in condition for allowance. Favorable action is solicited. The Examiner is kindly invited to contact the undersigned attorney by telephone, facsimile, or email for quickest resolution, if there are any remaining issues.

Respectfully submitted,



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